OTTAWA ROOFING PRO

Ice Dams & Attic Ventilation

Why ice dams form on Ottawa roofs, the Building Code's 1/300 ventilation rule, baffles and eave protection

6 Expert Answers from Roofing IQ

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Q1

Ice dam on my Orleans roof right now, what should I do?

Ice dams form when heat escaping through the roof melts snow, which then refreezes at the cold eave edge. Right now, the priority is protecting the inside of your home.

Indoors, move anything under the stained or wet area, put containers down to catch dripping water, and take photos of every wet spot, stain and damaged surface. If water is near a light fixture, an outlet or your electrical panel, leave that area of the house immediately and call emergency services from a safe place.

From inside the attic (if you can safely access it from a hatch), look for frost on the sheathing, wet or compressed insulation, or daylight around any penetrations. Do not go onto the roof or climb a ladder at the eaves, especially with ice and snow present.

According to Natural Resources Canada, the underlying cause of most ice dams is an attic that is above freezing, which warms the roof deck and melts the snow sitting on it. A well-sealed and well-insulated attic keeps the roof cold and reduces ice dam formation. Roofs with dormers, valleys or large overhangs are more prone to the problem. Ventilation also plays a role: the 2024 Ontario Building Code (Div. B, 9.19.1.2.) requires attic venting of at least 1/300 of the insulated ceiling area, with at least 25% of the openings at the top of the space and at least 25% at the bottom.

The Code also requires eave protection on shingle roofs, running at least 900 mm up the slope to a line at least 300 mm inside the inner face of the exterior wall (2024 Ontario Building Code, Div. B, 9.26.5.1.). Orleans sits at about 4,500 heating degree-days, well above the 3,500 threshold, so the climate exemption does not apply here. Eave protection limits how far backed-up water can travel under the shingles, but it does not stop an ice dam from forming.

The Government of Canada notes that having snow cleared from your roof by a crew reduces the chance of structural damage from heavy loads. That is work for a roofer or a snow-removal crew, not something to do yourself.

Once the immediate situation is under control, a roofer can look at the attic air sealing, insulation depth and ventilation to find out why the roof is warm enough to melt snow in the first place. Ask the roofer to explain in writing what they find in the attic and what they recommend to address the root cause, not just the ice at the eave, so you are not dealing with the same problem again next winter.

Q2

Vent area math for my Barrhaven attic: how is it done?

Attic Ventilation Area: How the 2024 Code Works It Out

The 2024 Ontario Building Code (Div. B, 9.19.1.2.) sets the required vent opening area as a fraction of the insulated ceiling area below the roof space. For most Barrhaven attics, that fraction is 1/300. If your roof slope is less than 1 in 6, or if the roof is framed with roof joists rather than trusses or rafters over a flat ceiling, the fraction rises to 1/150, meaning more vent area is required.

Here is how the calculation works in plain terms. Measure the insulated ceiling area in square metres, the floor plan of the space below the attic. Divide that number by 300 (or by 150 if either condition above applies). The result is the minimum total net free area of all vents combined, in square metres. Net free area is the actual opening through the vent after the screen or louver is accounted for, not the frame size stamped on the package.

The Code also says how that area must be distributed. At least 25 per cent of the required openings must be at the top of the attic space, and at least 25 per cent must be at the bottom, with vents distributed uniformly on opposite sides of the building. Roof vents, eave vents, gable-end vents or any combination are all permitted under 9.19.1.2., as long as the 25/25 split is met. Where baffles are used to keep insulation from blocking eave vents, the Code (9.19.1.3.) requires the baffle to leave at least 25 mm of clear air space, and the overall gap between insulation and sheathing in a vented roof-joist space must be at least 63 mm.

A few things to check before a roofer or insulation contractor starts the math with you. First, confirm whether your attic has a flat ceiling below it (the common truss setup) or roof joists, because that changes the fraction. Second, measure the ceiling area carefully if the floor plan is irregular, as Barrhaven houses with attached garages or bump-outs can have more than one insulated ceiling zone. Third, the Code says ceiling insulation must not restrict airflow through roof vents (9.19.1.3.), so the vent area calculation and the insulation depth are connected decisions.

Ottawa's heating degree-days for Barrhaven are about 4,500 (from Supplementary Standard SB-1 of the 2024 Ontario Building Code), which means the climate exemption that would allow a vented attic to be skipped does not apply here. Adequate ventilation also keeps the attic cooler in winter, which Natural Resources Canada identifies as a factor in reducing ice dam formation.

The City of Ottawa's list of projects not requiring a building permit names installing asphalt shingles; ventilation work alone is not named, so confirm with the City whether your specific scope needs a permit before work starts.

When you have two written quotes in front of you, set them side by side on these items: how many layers are being torn off and what the sheathing replacement costs per square foot, whether eave protection is included and how far up the slope it runs, what flashing work is covered, exactly what ventilation changes are proposed and how the vent area was calculated, and what disposal is included in the price versus billed as an extra.

Q3

Soffits painted over on my Glebe house: ventilation issue?

Painted-over soffit vents are a real ventilation concern. The 2024 Ontario Building Code (Div. B, 9.19.1.2.) requires that attic and roof spaces have vent openings of not less than 1/300 of the insulated ceiling area, with at least 25% of those openings at the top of the space and at least 25% at the bottom. Soffit vents can provide the low openings; block them and the airflow the Code calls for may not be there.

What painted-over soffits can mean for your Glebe house comes down to a few things worth checking. First, look in the attic on a cold morning for frost on the underside of the sheathing, damp insulation, or a musty smell. Those are worth photographing for the roofer. Second, check whether the soffits are solid wood (never vented) or perforated vented panels that have been painted shut. A roofer can probe the openings to see whether air passes through. Third, the 2024 Ontario Building Code (Div. B, 9.19.1.3.) also requires that baffles leave not less than 25 mm of air space between the insulation and the sheathing, and that ceiling insulation not restrict airflow through the vents. Even if the soffits are cleared, blocked baffles inside can limit the benefit.

On ice dams: Natural Resources Canada notes that a well-sealed and insulated attic results in a cool roof and is less prone to ice dams, and that ventilation keeps the attic colder. Eave protection under the shingles limits water pushed in by an ice dam, but it does not stop one from forming. Restoring soffit airflow is part of the longer-term answer.

A few things to ask or check:

- Are the soffit panels perforated or solid? Only perforated ones can be cleared or replaced to restore airflow.
- Are baffles in place at each rafter bay, and are they open at the top?
- Is there a ridge vent or gable vent providing the required upper opening?
- If the soffits need to be replaced rather than cleaned out, get the scope and price in writing before work starts.

The City of Ottawa's permit exemption names installing asphalt shingles. Soffit and ventilation work is not on that list, so confirm with the City whether a permit is needed before any structural or framing changes are made.
If you want quotes from local contractors, the request form on this site sends your details to roofing contractors listed in the Ottawa Construction Network directory. The single most useful question to put to any roofer before agreeing to the work: can you measure the existing net free vent area and show me in writing how the proposed work meets the 1/300 ratio the Code requires?

Q4

Ottawa roof with dormers and valleys: more ice dams?

Dormers and valleys do make ice dams more likely on an Ottawa roof. Natural Resources Canada describes complicated roofs with many valleys, dormers or large overhangs as more prone to ice damming, and Ottawa's 4,440 to 4,520 heating degree-days are well above the Code's 3,500 degree-day line, so eave protection is required here.

Why the shape of the roof matters

When the attic is above freezing, it warms the sheathing and melts the snow in contact with the roof. That meltwater runs down until it hits a colder section, such as the eave or a shaded valley, refreezes, and builds into a dam. Rain or further snowmelt then backs up behind it and can push under the shingles.

The two things that address the root cause are a well-sealed attic and adequate ventilation. The 2024 Ontario Building Code (Div. B, 9.19.1.1.) requires a vented air space where insulation sits between the ceiling and the roof sheathing, with at least 1/300 of the insulated ceiling area provided as vent openings, distributed so that at least 25% of the required area is at the top of the space and at least 25% is at the bottom. A cool roof, kept that way by good air sealing and insulation below and ventilation above, generally will not produce ice dams. Ask the roofer to confirm that airflow around each dormer is not blocked.

Eave protection limits the damage when an ice dam does form. The 2024 Ontario Building Code (Div. B, 9.26.5.1.) requires it on shingle roofs, running from the roof edge at least 900 mm up the slope to a line at least 300 mm inside the inner face of the exterior wall. It goes under the starter strip. It does not stop a dam from forming; it limits the water an ice dam pushes in. Valleys must also be flashed under the 2024 Ontario Building Code (Div. B, 9.26.4.3.), and on a roof with multiple dormers there are multiple valleys to detail correctly.

The Government of Canada notes that clearing snow off a roof decreases the chance of structural damage from heavy loads, but that is a job for a crew with the right equipment, not something to attempt yourself.

On a roof with several dormers, ask each roofer to list every valley and dormer flashing they will redo, so two quotes cover the same work.

Q5

Ice dams after adding insulation in my Ottawa attic, why?

Adding insulation does not stop ice dams on its own if warm air still reaches the attic. Here is how to think it through.

Why More Insulation Can Make Ice Dams Worse

Natural Resources Canada explains that when the attic is above freezing, it warms the roof sheathing and melts the snow in contact with the roof; the water runs down and freezes at the edge as an ice dam. Insulation alone does not stop warm air leaking from the house into the attic.

Natural Resources Canada's guidance on this is clear: a well-sealed and insulated attic produces a cool roof and generally will not have ice dams. So ask whether air sealing was part of the insulation job.

Ventilation is the other piece. The 2024 Ontario Building Code (Div. B, 9.19.1.2.) requires a vent area of not less than 1/300 of the insulated ceiling area, with at least 25 per cent of the openings at the top of the attic space and at least 25 per cent at the bottom. The Code also requires at least 63 mm of clear space between the insulation and the roof sheathing in vented roof-joist spaces, and baffles must leave at least 25 mm of air space (9.19.1.3.). If the new insulation was blown or batted in without baffles at the eaves, it may have blocked the soffit vents entirely. The Code says ceiling insulation must not restrict the free flow of air through roof vents (9.19.1.3.), and NRCan notes that ventilation keeps the attic colder and less prone to ice dams.

NRCan also notes that complicated roofs with many valleys, dormers or large overhangs are more prone to ice damming.

From inside the attic, look for frost on the sheathing on a cold morning, damp or compressed insulation near the eaves, and whether you can see daylight through the soffit baffles. If the baffles are buried or missing, that is worth fixing before next winter. The 2024 Ontario Building Code (Div. B, 9.26.5.1.) requires eave protection on shingle roofs, running at least 900 mm up the roof slope to a line at least 300 mm inside the inner face of the exterior wall. That membrane limits water pushed back by an ice dam from entering the building, but it does not stop the dam from forming.

A fix can combine air sealing, baffles that are in place and unobstructed, and ridge and soffit vents that meet the Code's vent area. Ask the roofer for the vent area calculation in writing.

When you have two written quotes in front of you for this work, put the ventilation scope, the baffle specification, the eave protection detail and the disposal plan side by side line by line before deciding which to accept.

Q6

Why does my Kanata attic smell musty in spring?

A musty smell in a Kanata attic in spring can point to moisture in the attic. The two things worth checking from inside the attic, without going onto the roof, are frost stains or dark streaks on the sheathing and damp or compressed insulation near the eaves.

Here is what a roofer will look at when they assess it:

- Air leaking from the living space into the attic.
- Ventilation that is blocked, undersized or unbalanced. The 2024 Ontario Building Code (Div. B, 9.19.1.2.) requires vent area of not less than 1/300 of the insulated ceiling area, with at least 25 per cent of the openings at the top of the space and at least 25 per cent at the bottom.
- Insulation pushed against the eaves that blocks airflow. The Code (9.19.1.3.) requires at least 63 mm of clear space between insulation and sheathing in vented roof-joist spaces, with baffles leaving not less than 25 mm of air space.

None of this requires climbing onto the roof. From inside the attic on a cold morning, frost on the sheathing or dark staining tells you moisture has been collecting there. Damp insulation near the eaves, or insulation that has settled and is touching the sheathing, points to the airflow problem the Code addresses.
Published Ottawa-area quotes show too few figures for ventilation work alone to give a reliable range here; ask for a written itemized quote that separates any air-sealing work, baffle installation and vent additions as distinct line items. The Consumer Protection Act, 2002 requires a direct agreement, meaning one signed somewhere other than the contractor's place of business, to include an itemized list of prices. That covers a quote signed at your kitchen table.

Before the roofer starts, search the contractor's WSIB clearance online to confirm coverage is current; the clearance is valid for up to 90 days.

Ask a roofer who does attic assessments to start inside the attic: they can tell you whether the sheathing shows damage that would change the scope of work.

Disclaimer: This guide is provided for informational purposes only by Ottawa Roofing Pro. It does not constitute professional advice. Always consult qualified contractors and your local building authority (the City of Ottawa or your own municipality) before starting any roofing project, and do not go on a roof yourself. Roofing work in Ontario must meet the 2024 Ontario Building Code (O. Reg. 163/24). Information is current as of November 15, 2026 and may change. Visit **ottawaroofingpro.ca** for the latest answers.